

Assessing abnormal rigid surfacing in common dolphins (*Delphinus delphis*) off southern Portugal



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Introduction

Detailed observations of free-swimming cetaceans with apparent **physical abnormalities** are crucial to understand **individual and population health**^(1,2). Here we present a long-term case study of common dolphins (*Delphinus delphis*) off southern Portugal which consistently surface in a **rigid, laboured manner, seemingly unable to arch their backs** (Fig. 1).



Fig. 1 – Common dolphin exhibiting typical characteristics of rigid surfacing and signs of emaciation.

Methodology

Data were collected between 2010 and 2025 using **dedicated boat-based marine mammal surveys and platforms of opportunity**. Common dolphin behaviour and social structure were recorded and pictures for **photo-identification** were taken whenever possible. Additionally, the presence of individuals with abnormal rigid surfacing was **documented sporadically and described in detail** to identify common characteristics.

Results

We recorded **103 cases** of common dolphins with abnormal rigid surfacing, with more occurrences in recent years (Fig. 2).

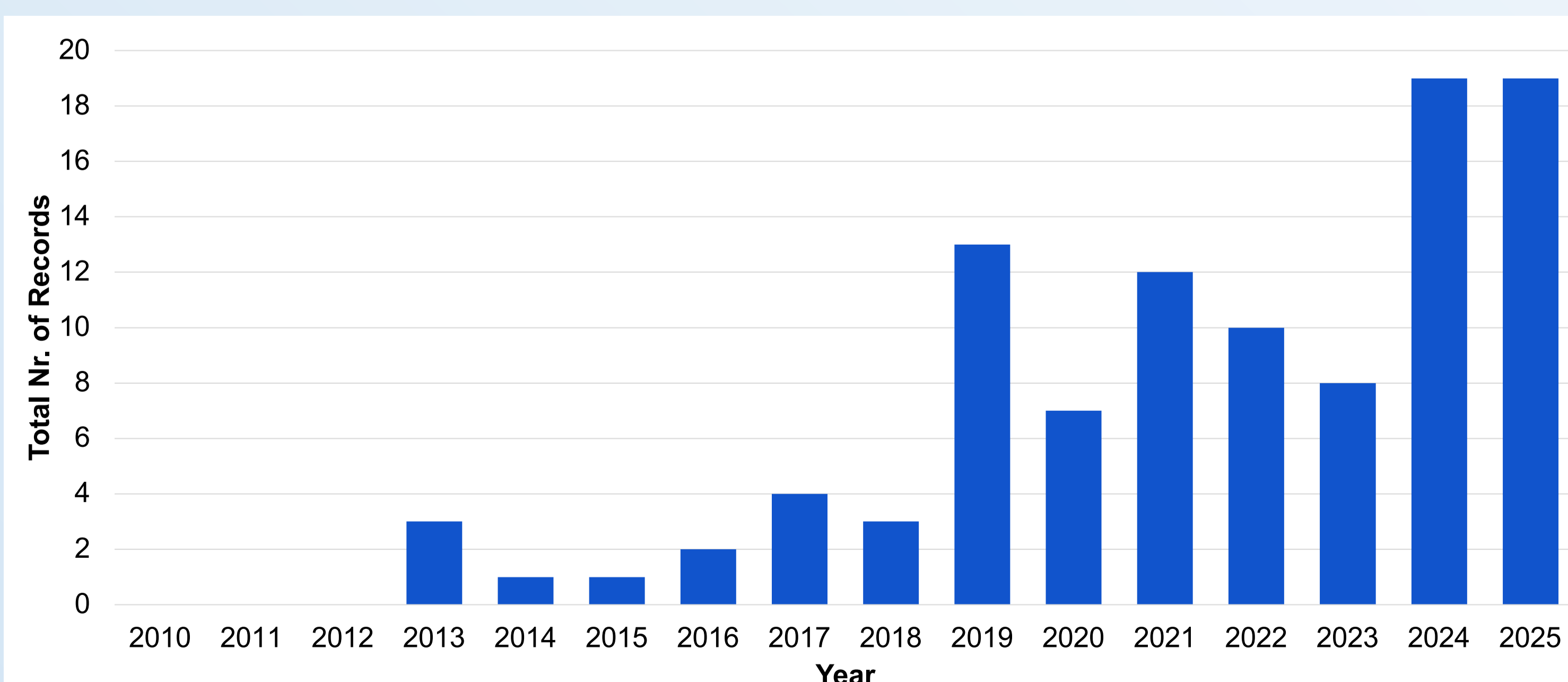


Fig. 2 – Total number of recorded cases of common dolphins exhibiting rigid surfacing per year.

Joint characteristics included **prolonged exhaling before breaking the surface (“blowing bubbles”), prominent, “inflated” rib cages**, surfacing without arching their backs, and sometimes signs of **emaciation** (Fig. 1).

In 19 cases (18.4%) **multiple affected animals** (up to four) were **within the same group** (Fig. 3) and eight dolphins (7.8%) were **encountered alone**.



Fig. 3 – Two affected adults within the same group.

We identified **62 individuals**, 11 of which (17.7%) were re-sighted. The longest **time between re-sightings** of an affected individual was **six years** (Fig. 4).



Fig. 4 – Photo-identification match of affected adult.

Six affected individuals were **juveniles** (Fig. 5). Six were **mothers with dependent calves**, two of which (33.3%) were also affected.



Fig. 5 – Affected juvenile with additional deformity.

Discussion and Conclusion

Our results indicate that there may be **different degrees of severity** to this condition (integrated into the group, surviving numerous years vs. alone, emaciated, leaping for every breath). However, we **cannot identify the underlying cause(s)** of this condition, which could range from spinal, to abdominal, to thoracic (e.g., pulmonary) origins, and may be genetic or infectious^(3,4). Yet, this study may contribute to **characterising a pattern of recurring and increasing health implications in common dolphins off southern Portugal**.

References

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More info here!



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